[0015] FIG. **3** is a flowchart further describing post capture processing pertaining to character recognition.

[0016] FIG. **4** illustrates an example that shows the mobile device being moved around to form an image in freestyle drawing mode.

[0017] FIG. **5** illustrates an example that shows the mobile device being moved around to form an image in character recognition mode.

[0018] FIG. **6** is a block diagram of an exemplary portable mobile communications device and companion accessory according to an embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0019] The present invention coordinates motion sensors or motion sensing capabilities with a software application that manages the rendering of images on the mobile device display. The present invention further utilizes a motion selection button that can be easily toggled during operation. The motion selection button provides a mechanism that identifies intentional and unintentional motion. Only intentional motion is captured and rendered on the mobile device display. Unintentional motion is ignored. Motion is considered intentional so long as the user actuates the motion selector button.

[0020] The present invention can be broken down into two main components. The first component involves the capturing of motion using the motion sensors and the rendering of a graphic corresponding to the sensed motion on the mobile device display. The second component involves manipulating the captured and rendered graphic using a software application.

[0021] There are many potential uses for the captured graphic(s). For instance, the captured graphic(s) can be used as input into a messaging system such as short messaging service (SMS), multi-media messaging service (MMS), instant messaging (IM), or e-mail. Moreover, the captured graphic can be operated on by a character recognition program to convert the freestyle motion input into a recognized alpha-numeric character. Such a feature would allow for the composition of text messages simply by 'writing' them by hand and having the input converted to recognized characters. This would provide an alternative to text message composition using the mobile device keypad.

[0022] Other characters can be recognized as well. For instance, Chinese characters can be rendered even if the mobile device does not recognize Chinese characters. The software can also be coded to recognize subtle orientation changes like a twist to the left or the right as an indication to make the stroke bolder.

[0023] The following detailed description of embodiments refers to the accompanying drawings, which illustrate specific embodiments of the invention. Other embodiments having different structures and operations do not depart from the scope of the present invention.

[0024] FIG. **1** is a block diagram of an exemplary mobile device **100** according to an embodiment of the present invention. The components illustrated in FIG. **1** do not form a complete mobile device **100**. Rather, only those components applicable to the present invention are shown and described. Some of the components listed are re-used by other applications within the mobile device **100** or to perform additional functions.

[0025] The mobile device includes a processor **110** that is responsible for receiving and processing data pertaining to motion detection and a motion capture application **120**. Motion detection is achieved via an internal motion sensor **130** that is coupled with the processor **110**. The motion sensor can have multiple functions within the mobile device **100**. For purposes of the present invention, the motion sensor **130** can be toggled between an active and inactive state by the motion capture application **120**. The mechanism used to toggle the motion sensor between an active and an inactive state is a motion selector button **140** that is coupled with the processor **110** via the motion capture application **120**. The motion selector button **140** is actuated when the user physically presses and holds the motion selector button **140** down. This signals the motion capture application **120** to cause the processor to capture and process positional data as determined by the motion sensor **130**. The captured positional data can be tracked and plotted to form a two-dimensional graphical image. The two-dimensional graphical image can then be rendered on the display **150** of the mobile device **100**.

[0026] The motion capture application **130** can be operated in two basic modes. The first mode is a straight forward image capture mode in which the tracked motion is scaled and rendered on the mobile device display **150** exactly as it was captured. The rendered image can then be saved as a graphical file in any number of standard image file formats including, but not limited to, a jpeg file, a gif file, a bitmap file, etc. The scaling may be determined, for example, by determining the maximum deviation in the X and Y directions of the two-dimensional plane defined for a particular character and then normalizing the captured motion within the X by Y frame.

[0027] The second mode of operation adds a character recognition feature. If operated in this mode, the captured image is compared to a stored set of reference characters **160** in hopes of finding a match. If a match is found, the stored reference character is displayed on the mobile device rather than the captured image. This mode is especially useful when the user wants to draft a message. Once the motion capture character input is complete, the matching reference characters are used as input to a messaging application **170**. The set of reference characters can include, but is not limited to, the ASCII set of characters, Chinese characters, Japanese characters, Greek letters, other common symbols such as mathematical operators or parentheses, etc.

[0028] FIG. **2** is a flowchart describing the motion capture process for creating graphical images. The first step is to detect when the motion selector button has been actuated **205**. Once the motion selector button is actuated, the mobile device orients itself by determining a two dimensional coordinate system **210** that is, for example, parallel to the face of the mobile device. This orientation occurs somewhat continuously to adjust for subtle but unintentional changes in orientation caused by the user. For tracking and image creation purposes, only two-dimensional renderings are created. Actuation of the motion selector button indicates that motion of the mobile device is to be sensed and tracked until the motion selector button is released **215**. Alternatively, the